

Darwin Atmospheric Radiation and Cloud Station

30 July 2002



- 10:30** *Traditional Welcome Ceremony*
by Mr Eric Fejo and
representatives of the Larrakia Nation
- 11:00** *Welcome Remarks* by Larry Jones,
Site Manager, Tropical Western Pacific,
Atmospheric Radiation Measurement (ARM) Program,
US Department of Energy.
- 11:10** *Dedication Address 1*
by Dr Wanda Ferrell, ARM Program Director
- 11:20** *Scientific Significance*
by Dr Thomas Ackerman,
ARM Chief Scientist
- 11:30** *Scientific Collaboration*
by Dr John Zillman,
Director of Meteorology
- 11:40** *Dedication Address 2*
by The Hon Dr Sharman Stone MP,
Parliamentary Secretary to the
Minister for the Environment and Heritage
- 11:50** *Declaration of Opening*
(Unveiling of Site Plaque)
by Dr Sharman Stone and Dr Wanda Ferrell
- 12:00** *Reception Lunch*
(food, beverages provided at Site)
Video Showing: "Clouds of Change"
Guided Site Tours

The United States Department of Energy's (DOE) Atmospheric Radiation Measurement (ARM) Program began operations in its Tropical Western Pacific (TWP) locale in October 1996 when the first Atmospheric Radiation and Cloud Station (ARCS) began collecting data on Manus Island (PNG).

Two years later, in November 1998, a second ARCS began operation on Nauru. Now a third ARCS has begun collecting data in Darwin. The Manus, Nauru, and Darwin sites are operated through collaborative agreements with the PNG National Weather Service, The Nauru Department of Industry and Economic Development (IED), and the Bureau of Meteorology. All ARM TWP activities in the region are coordinated with the South Pacific Regional Environment Program (SPREP) based in Apia, Samoa.

Site Selection

The new Darwin site was chosen for both scientific and economic reasons. A location was required that would contribute to the scientific goals of the ARM Program and where an ARCS could be installed and operated within budget constraints. A request for proposals was published. A competitive selection process was conducted and the Special Services Unit of the Bureau of Meteorology was awarded the contract. This contract calls for technical support for the Manus Island and Nauru sites, the operation of the Darwin site, and scientific collaboration.

The Darwin site offers proximity to the climate regimes that are of specific interest for ARM atmospheric radiation and cloud research. On a yearly basis, this area experiences a dry continental regime, a monsoonal regime, and the transitional periods in between that reflect abundant convective cloudiness. The Darwin site is embedded in an existing measurement network, and offers to ARM and the scientific community many related and beneficial ancillary measurements. In addition, the Darwin enterprise is associated with existing scientific programs of the Bureau of Meteorology and CSIRO, affording rich research collaboration beneficial to all programs involved.

Site Commissioning

The Darwin site was leased from the Department of Defence in July 2001. Site preparation began in September 2001 and the infrastructure was completed in January 2002. Instruments and the data system were installed during February and March. The Darwin site began formal operations on 1 April 2002. The Darwin site is immediately adjacent to the Darwin Airport Meteorological Office and comprises an area 50 by 180 metres. Within this area are an instrument field, the ARCS vans, and a temporary operations office. A permanent operations office and workshop will be added later this year.

The Darwin site has three main functions:

- (1) to collect scientific data,
- (2) to serve as a base for maintenance of the Manus Island and Nauru sites, and
- (3) to serve as a ready source of instrument spares for the Manus Island and Nauru sites.

Scientific Oversight and collaboration

The contract between the US Department of Energy and the Special Services Unit of the Bureau of Meteorology also provides for scientific oversight and collaboration. The Bureau of Meteorology Research Centre (BMRC) in Melbourne is responsible for this component in collaboration with CSIRO. They work closely with the TWP Site Scientist and TWP Program Offices to ensure data quality and to coordinate collaborative research and the sharing of data. This effort is already underway and will increase now that the Darwin ARM site is operational.

Summary

The DOE ARM Program's Tropical Western Pacific locale now has three Atmospheric Radiation and Cloud Stations collecting data. These facilities at Manus Island, Nauru and Darwin complete the complement of measurement sites planned for the TWP. Operations of these sites will continue to be managed by the TWP Office at Los Alamos National Laboratory, USA. The Bureau of Meteorology will provide the technical maintenance for all three sites as well as the day-to-day operation of the Darwin site. The collaborative arrangement with the Bureau of Meteorology has made it possible to establish a third site in the TWP. It also provides for cost effective operations of all three sites.